The Eagle

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News Bits

SMDC takes on new logo

The U.S. Army Space and Missile Defense Command (SMDC) is transitioning to the new logo shown above.

The new logo will provide a common unit symbol that will apply to all elements of the command. The new logo is the unit patch worn on the military uniforms of SMDC soldiers.

The Eagle patch logo should appear on building signs, VTC backgrounds, displays, wall charts, publications, CommandNet and internet homepages, briefings, etc. this month.

Colonels list names three SMDC officers

Three Space and Missile Defense Command lieutenant colonels have been selected for promotion. Congratulations to Lt. Col. Patricia Baxter, ARSPACE; Lt. Col. Edwin Martin, Principal Assistant Responsible for Contracting & Acquisition Management Office; and, Lt. Col. Steve Rowe, FDIC.

Inside The Eagle

New administration looks at space, missile defense

by Jonathan Pierce
Huntsville, Ala.

The changeover to new administrations is nothing new to American democracy. But the selection of Donald H. Rumsfeld as the new Secretary of Defense is of interest, and that not merely because he has already served in the position before.

Rumsfeld has also served as chairman of the Commission on the Ballistic Missile Threat to the United States (1998), and as chairman of the U.S. Commission to Assess National Security Space Management and Organization (2000). The support of these commissions for national missile defense and the development and protection of space assets have direct implications for the U.S. Army Space and Missile Defense Command. Both the Executive Summary of the 2000 commission and Rumsfeld's testimony at his confirmation hearings provide evidence that the coming years will see increased attention to space and missile defense.

Rumsfeld told the Senate Armed Service Committee Jan. 11 during his confirmation hearing that the world is a different and more peaceful one with the Soviet Union gone, "but it is nonetheless a dangerous and untidy world."

He called the struggle today not as obvious as the one against the Soviet Union, but "just as noble." He said the U.S. goal is "to turn these years of influence into decades of peace. And the foundation of that peace is a strong, capable, modern military."

Rumsfeld's discussion of President Bush's three over-arching goals for bringing U.S. armed forces into the 21st century indicates an awareness of space and missile defense.

He said, "First, we must strengthen the bond of trust with the American military," Rumsfeld said. "The brave and dedicated men and women who serve in our country's uniform—active, Guard and Reserve—must get the best support their country can possibly provide them."

Second, the United States must develop capabilities to defend against missiles and terrorism, and newer threats aimed against space assets and information systems. "The American people, our forces abroad and our friends and allies must be protected against the threats which modern technology and its proliferation confront us," he said.

Third, DoD must take advantage of the new possibilities the ongoing technological revolution offers. "We need to ensure that we will be able to develop and deploy and operate and support a highly effective force capable of deterring and defending against new threats. This will require a refashioning of deterrence and defense capabilities.

Rumsfeld told the senators he will pursue five key objectives. "First, we need to fashion and sustain deterrence appropriate to the new national security environment," he said.

The proliferation of weapons of mass destruction and their means of delivery must be acknowledged and recognized and then must be managed, he said. The United States should still strive to slow proliferation, but "a determined state may nonetheless succeed in acquiring weapons of mass destruction" and missiles.

"Credible deterrence...must be based on a combination of offensive nuclear and non-nuclear defensive capabilities working together to deny potential adversaries the opportunity and the benefits that come from the threat or the use of weapons of mass destruction against our forces, our homeland, as well as those of our allies."

The second objective is to assure the readiness and sustainability of deployed forces. "The price of inadequate readiness is paid in unnecessary risks to American interests and in unnecessary risks to the lives of American service men and women," he said.

The third objective is to modernize U.S. command, control, communications, intelligence and space capabilities.

He said, "We simply must strengthen our intelligence capabilities and our space capabilities, along with the ability to protect those assets against various forms of attack."

The fourth objective looks to speeding research, development and acquisition. "The transformation of U.S. military power to take full advantage of commercially created information technology may require undertaking near-term investment to acquire modern capabilities derived from U.S. scientific and industrial pre-eminence," he said.

The fifth objective is the reform of DoD structures, processes and organization.

Jim Garamone, American Forces Press Service, contributed significantly to the above article.

Commanding General's Corner

Talented, dedicated workforce makes progress in space, missile programs

Space and missile defense programs made great progress last year, thanks in large part to the most talented and dedicated workforce in the Army, the SMDC employees.

In Theater Missile Defense (TMD), your efforts were crucial.

The Army's lower-tier system, the Patriot Advanced Capability-3, had four more successful hit-to-kill intercepts, extending its perfect record to six out of six! You helped prove hit-to-kill technology can work.

Meanwhile, your work helped the Army's upper-tier Theater High Altitude Area Defense system enter the next stage of development, moving it a step closer to protecting deploying troops.

Lt. Gen. John Costello

SMDC employees also supported all international TMD programs, and they all moved forward. For example, the Israeli government recently declared the deployed Arrow system fully operational.

When it comes to Cruise Missile Defense (CMD), SMDC again proved to be the leader. The only CMD system that has moved past the viewgraph stage, SMDC's Joint Land Attack Cruise Missile Defense Elevated Netted Sensor System was so impressive it won a Design and Engineering Award from Popular Mechanics Magazine.

You also made many contributions to the country's National Missile Defense (NMD) program. For example, we opened the NMD User Laboratory in Colorado Springs. The Joint Requirements Oversight Council approved the NMD Operational Requirements Document, which melds "white-coat" engineering with "green-suit" operator needs. To oversee all its lead-service activities, SMDC, in cooperation with the U.S. Army Training and Doctrine Command (TRADOC), established the NMD-Joint TSM (TRADOC System Manager) Directorate.

Finally, the entire NMD community learned many technical and quality-control lessons in two integrated flight tests, which we supported extensively.

SMDC's reputation prompted the Ballistic Missile Defense Organization to give it responsibility for overseeing the missile-defense technology base for all the services.

Conceptually, SMDC led the way in beginning the process of melding TMD, NMD and CMD into a seamless, multi-tiered missile defense. At last month's symposium in El Paso, we released the Air and Missile Defense 2020 White Paper. One of its goals is to integrate the air pictures of TMD, NMD and CMD into one "globally integrated air picture" by 2020.

In directed energy, your efforts led the way again. We published the DoD Laser Master Plan, which guides various military laser efforts.

Meanwhile, the Army's only prototype laser weapon system, the Tactical High Energy Laser (THEL) Advanced Concept Technology Demonstration (ACTD), achieved single and multiple rocket intercepts, and received the Grand Award in General Science from Popular Science Magazine. Also, the High Energy Laser Systems Test Facility (HELSTF), where THEL is located, received the Quality New Mexico Pinon Level Award for management improvements.

In addition, SMDC, in partnership with Lawrence Livermore National Laboratory, has developed a solid-state laser that produces 10 kilowatts of average power. This is a significant milestone in the development of solid-state lasers for tactical laser.

You did "good" in Army space, too.

We published the Space Master Plan to provide a comprehensive roadmap for future Army space initiatives.

In addition, ARSPACE broke ground for its new headquarters and assumed responsibility for the Big Crow Program Office, which has been renamed the Electronic Warfare Company, to reflect its increased operational focus on this evolving form of warfare.

Showing our increased commitment to space, we assigned a general officer to a new, dual-hatted position of deputy commanding general for ARSPACE and SMDC Operations.

Meanwhile, our Army astronauts continued to support the National Space Program by participating in several space-shuttle missions to the International Space Station (ISS). In October, Col. Bill McArthur flew on the 100th shuttle mission, helping to build the ISS. Earlier in the year, Lt. Col. Jeffrey Williams space-walked during another mission.

As you can see, we had a super year in 2000.

That said, this year promises to be just as exciting.

As it always does, SMDC will have soldiers and civilians participating in military exercises around the world.

In March, SMDC, together with TRADOC and the National Reconnaissance Office, will sponsor a Space and Missile Defense Franchise Wargame. SMDC's Force Development and Integration Center (FDIC) is spearheading our effort in this wargame, which will study space and missile-defense doctrine needed in the timeframe of 2010-2030.

The following month, FDIC will incorporate lessons learned from the March game into the Service-wide Army Transformation Wargame.

In the first half of this year, the NMD Joint Program Office will test the new tactical booster and conduct the next crucial integrated flight test. These will be critical events as we transition to a new administration and look toward a deployment decision.

Perhaps no other technology has more potential impact on future battlefields than directed energy. This year, SMDC will spearhead the Army's efforts in lasers at HELSTF. The THEL testing program will continue, as the U.S.-Israeli Memorandum of Agreement has been amended to include a Mobile THEL System Engineering Trade Solution. Using lessons learned from the THEL ACTD, SMDC will develop a concept design for the Mobile THEL, while also conducting risk reduction and lethality testing.

Another promising laser system, the Advanced Tactical Laser will become an ACTD multi-service program. This is a chemical laser that integrates a much smaller coil laser onto a variety of ground, air and sea platforms for use against cruise missiles and other targets.

In early April, we will ship a state-of-the-art solid-state laser from California to HELSTF for lethality testing. Because it is small and compact, the solid-state laser is a promising laser technology for the future objective force.

Relying on the outstanding talent of the SMDC team, and using the processes we have developed in our Army Performance Improvement Criteria program, SMDC is well armed to take on the challenges of this next year and make it every bit as successful as last year.

Thanks for all you've done and I'm confident you'll do it again,

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Computer security - a daily essential

by DJ Montoya
Colorado Springs, Colo.

Many U.S. Army Space and Missile Defense Command (SMDC) employees remember when they used manual typewriters to do their jobs, now most of us can't imagine doing without computers for 15 minutes let alone several days. We complain about obsolescence, lack of memory and speed, and dread the possibility that our computer will call in sick.

Maintaining computer health is an important aspect of Computer/Automation Security. Looking back on some of the well known viruses that have come out in the last year and a half, to include the Melissa virus on March 29, 1999, and the I Love You virus on April 5, 2000, Army Space Command (ARSPACE) has managed to weather the storm with few consequences, according to Bob Bowles, Information Assurance Network Manager (IANM) in the Directorate of Information Management.

"ARSPACE has an excellent program at this point," said Bowles. "In order to implement a successful security program, it has to start at the top. The command has to be involved and supportive to establish the security environment."

"It is a team effort involving the system administrators (SA), the Information Assurance Manager (IAM), Information Assurance Security Officers (ISAO), and the individual users," Bowles said.

As with most organizations ARSPACE has an administrative and a secure computer network. But the ARSPACE administrative net extends across the country and around the globe, he said.

The administrative network—what everyone uses for most of their work— is the most vulnerable network. "More business is being conducted daily on the Internet, so you're dealing with non-secure media. Data on the Internet is exposed to numerous security hazards, you must have measures in place to protect your data," he said.

For example, to do what's called a simple mail transfer protocol (i.e. e-mail), you have to open up ports on your firewalls to allow e-mail traffic to come through.

This is one of the greatest risks because anybody can send a malicious virus in the form of an attachment within an e-mail message. "You have to make sure your staff is security conscious about opening attachments or opening e-mails from unknown sources," said Bowles.

"We have suffered three computer losses here at ARSPACE," he said. "Not because the data was wiped out, but because it became infected with a particular virus. At that time there was no antidote for the virus. Our only option was to wipe the hard drives."

This was a small price to pay considering the number of attacks. Bowles explained that number of attacks varies.

"In June, we had 3,355 viruses that were quarantined by our virus protection software. In July we had very little, only 18. In August, we had 6,109 viruses that were quarantined at our server," he said.

Bowles says the virus protection software used by ARSPACE will do its job, however, we are only secure, literally, one day at a time.

"Whatever your virus protection is protecting today, tomorrow there is something out there that it won't protect. So we are updating on a weekly basis now," he said.

He explained that many of the viruses that are written today exploit the user's first 50 or so names in their global e-mail address file.

"What happens is your e-mail sends a message to the first 50 addresses on your global e-mail address list," said Bowles. "Then as people open the message, the virus continues to send messages to the first 50 people on their personal and global e-mail address lists. So it keeps continually exploiting itself through the network."

The solution is to quarantine the workstation the virus is on to keep it from spreading any further," said Bowles. "Once we have contained the virus, we take the appropriate countermeasures and sanitize the system or systems it has infected. Once we know the system is clean, we can put the workstation back on the network."

One of the things ARSPACE is doing to protect their network from other threats such as hackers, is the installation of a secure router.

"It is monitored by The Army Network Security Operations Center (ANSOC). When they receive information of known threats from certain organizations or people, they will block those internet provider (IP) addresses at their level."

ARSPACE also blocks those IPs with its own firewall and other security devices.

The idea is to make it more difficult for a hacker to access the network. In the event of an attack, it buys time for our network staff to react. The longer a hacker is penetrating a network, the greater his chances are of getting caught.

"If you look back starting in the summer of 1999 when the Melissa virus came out basically we suffered less impact than any other military installation in the city of Colorado Springs," he said.

"In saying that, you know we could be hit and suffer loss tomorrow, but again we have a very security conscious command, starting from the commander on down through the ranks. This is one of the key ingredients to our success."

ARSPACE hosts Joint Space Power Seminar

COLORADO SPRINGS, COLO. -- The U.S. Army Space Command (ARSPACE) hosted the first Future of Joint Space Power Seminar Jan. 10-12. U.S. Space Command (USSPACECOM) and U.S. Joint Forces Command (USJFCOM) sponsored the event in Colorado Springs, Colo.

This seminar was designed to engender a spirit of cooperation within the Joint community to enable the various services to share expertise, and understand each other's requirements, interests and capabilities for future Joint space operations.

According to Col. (P) Richard V. Geraci, Deputy Commanding General-Operations for the U.S. Army Space and Missile Defense Command and ARSPACE, the seminar was an important milestone for both USSPACECOM and USJFCOM who address joint issues on a daily basis and have critical impact on the future of Joint warfare.

The seminar focused specifically on the space organizational and command and control structures and processes needed to support a future theater commander-in-chief or joint task force commander.

Officials stated the goal for the seminar was to identify promising areas for further joint concept development and follow-on experimentation. Joint concept development and experimentation is focussed on the operational level of war.

The joint experimentation program consists of three core areas: near-, mid-, and far-term. This seminar supported the far-term effort ranging from the year 2020 and beyond with the goal of embedding space in ongoing and future Joint Transformation efforts.

Welcoming a group of more than 85 participants, Geraci said, "Space is inherently joint and all current and future military operations are dependent on space-based capabilities. It is imperative that future joint requirements involving space be addressed in periodic seminars such as this.

"The Army is the largest user of space-based products," he added. "We need reliable, responsive, timely support; and, we need to normalize, institutionalize, and operationalize the use of space-based products into the Army's objective force."

According to seminar officials, the three day seminar examined the effect of projected space-based capabilities on joint warfighting in the 2020-2030 timeframe. The integrating theme was the continued advancement of capabilities postured in the USJFCOM integrating concept, the Rapid Decisive Operations, and the USSPACECOM Long-Range Plan and vision.

The seminar consisted of briefings followed by question-and-answer sessions on a number of subjects to include Joint Experimentation Engagement, DOD Space Assessment, the Future Space Battlefield, and the 2025 Space Threat.

Participants included members of the USJFCOM, USSPACECOM, ARSPACE, SMDC Force Development Integration Center, Navy Space Command, U.S. Training and Doctrine Command, National Aeronautics and Space Administration, Air Force Research Laboratory, Air Force Space Command, Massachusetts Institute of Technology, and OAO, a contracting firm.

The symposium is the latest in a series of future-oriented seminars being conducted by Joint Forces Command. Other topics have included the effect that bio-centric operations, robotics, non-kinetic engagement systems, and other emerging, advanced technologies will have on future joint operations.

The Space and Missile Defense Acquisition Center:

Setting Goals for the New Millennium

The Space and Missile Defense Acquisition Center (SMDAC) was established Oct. 1, 1997, as one of the command's three major subordinate elements (MSEs) and was structured to capture current and future SMDC acquisition programs within one organization. The Acquisition Center was to develop, field, and sustain low-density space and missile defense systems for the warfighter as the command's material developer, tester and evaluator.

During its 3-year history, SMDAC has validated its organization, mission, and functions. With limited resources, this MSE has demonstrated its value as a key player within SMDC and in the command's external environment. The Acquisition Center has worked hard to obtain synergism between its internal organizations and improve acquisition oversight and programmatics.

Commenting on her goals for the Acquisition Center, Dr. Linda Gentle, the acting director, said, "During 2001, I plan to focus on continuing to improve the coordination and synergy within the Acquisition Center and across SMDC. While we are a very diverse organization, I believe the commonality of our missions will allow us to improve on how we do business as an organization. In the past we focused on setting goals and objectives for each of our five very diverse subordinate elements. Now it's time to consolidate and coalesce these goals and objectives for the entire center." Gentle went on to say she planned to standardize financial management, add rigor to program reviews and contract cost performance reviews, and continue using the Army Performance Improvement Criteria (APIC) as the Acquisition Center way of doing business.

The Acquisition Center consists of five elements: the Army Space Program Office (ASPO) located in Washington, D.C.; the High Energy Laser Systems Test Facility (HELSTF) located at White Sands Missile Range, N.M.; the U. S. Army Kwajalein Atoll/Kwajalein Missile Range (USAKA/KMR) located in the Kwajalein Atoll; Joint Land Attack Cruise Missile Defense Elevated Netted Sensor Systems (JLENS) Project Office; and the Ballistic Missile Targets Joint Project Office (BMTJPO). The Acquisition Center Director and staff, JLENS, BMTJPO, and the Kwajalein Support Directorate are all located in Huntsville, Ala.

An interceptor is launched at Kwajlein Atoll.

Army Space Program Office

As part of delivering world class support to the warfighter, ASPO will be facing the most demanding challenges in its 25- year history of successful streamlined acquisition and life-cycle management of Tactical Exploitation of National Capabilities (TENCAP) systems. TENCAP systems receive, process, and transmit information from a plethora of joint collectors and form an integral part of DoD's intelligence architecture. ASPO will field four new Tactical Exploitation Systems and 400 Grenadier Brat Blue Force Tracking devices while sustaining over 60 legacy TENCAP systems. Other priorities include support for TENCAP equipment in the Army's Transformation Force and the Distributed Common Ground System, (development and fielding of the Semi-Automated Imagery Processor), the TENCAP Master Plan, and the TENCAP Systems Management Plan. ASPO's efforts are directed to bringing space capabilities to ground maneuver forces. ASPO will also focus heavily on programs involving Joint Intelligence Surveillance Reconnaissance and creating a marketing plan that more keenly focuses ASPO resources and priorities.

High Energy Laser Systems Test Facility

HELSTF's primary focus will be the continuing transformation of its test infrastructure to support directed energy (DE) programs. Facilities are being modified to accept the 10 kW Solid State Heat Capacity Laser, expected at HELSTF this spring. System integration and checkout, as well as development of operation and maintenance procedures will also occur. HELSTF will also support other key efforts such as implementation of Lethality and Propagation plans, identification and refinement of Military Utility models and simulations, and continued support of war games and military exercises. HELSTF will help update the Directed Energy Master Plan 2002 and support the annual DE Symposium.

U. S. Army Kwajalein Atoll/KMR

USAKA/KMR will support nine to 10 major missile defense tests, perform 40,000 space surveillance taskings, identify 200 space objects, and track 20-25 new foreign launches. Its Modernization and Remoting program will continue with the second of four radars, MultiMeter Wave, attaining initial operational capability. The Center for Scientific Excellence at KMR will also be established, greatly expanding the potential usage of KMR. The organization to be renamed "The Ronald Reagan Ballistic Missile Test Facility at Kwajalein Atoll" later this year, will begin transition to the FY 2003 organizational structure. APIC Phase III and Covey training will be completed and USAKA/KMR will compete in the President's Quality Award program, seeking to retain not only the SMDC Commander's Quality Award but also gain an OPM site visit.

A JLENS Aerostat is readied for flight.

JLENS Project Office

The JLENS system will provide continuous over-the-horizon surveillance and fire control against conventional air defense threats and land attack cruise missiles by providing long range acquisition and targeting for our Theater Air and Missile Defense (TAMD) weapons. As a "cornerstone" Joint TAMD system, JLENS will directly increase the survivability and sustainability of soldiers and equipment on the battlefield and will have a positive effect on the sizing, shaping, and equipping of the Objective Force. JLENS conducted a successful Precision Track and Illumination Radar Preliminary Design Review in FY 2000 and is on track to complete the Critical Design Review in FY 2001. The JLENS program conducted an Army System Acquisition Review Council In-Progress Review in FY 2001. The council agreed that JLENS is a cost and manpower effective solution and approved continuation toward Milestone II. The JLENS Operational Requirements Document has been updated and will be submitted for Army and joint services staffing in FY 2001.

Ballistic Missile Targets JPO

BMTJPO will continue to support to customers which include National Missile Defense, Patriot, Theater High-Altitude Area Defense Project Office, Navy Area Defense, Navy Theater Wide, the Air Force and the Ballistic Missile Defense Office. Of the 25 target launches scheduled for FY 2001, the Strategic Targets Product Organization will conduct five launches and the Theater Targets Product Office will launch the other 20. BMTJPO will also pursue technology insertion efforts to provide enhanced targets. To achieve its overarching goal, "Providing the Best Value Targets to Our Customers," BMTJPO will continue to improve internal systems and processes using the APIC. Defense Systems Management College instructors will also facilitate four 16-hour workshops tailored to unique BMTJPO acquisition issues.

SMDC's Strategic Management System

"Our commitment to meeting these challenges compels comprehensive transformation of the Army. To this end we will begin immediately to transition the entire Army into a force that is strategically responsive and dominant at every point on the spectrum of operations."

Excerpt from *The Army Vision Statement,* October 1999

Change is reality for the Army, according to Nelson McKown of the SMDC Command Assessment Division, Strategic Planning and Analysis. Change, he says, is reality for the Space and Missile Defense Command. The Army maintains dominance by properly anticipating future requirements and transforming to meet those needs. Remaining an Army that is "persuasive in peace, invincible in war" requires readiness for the future. This means the Army must not merely react to change, but must be on the leading edge of change. "So too," said McKown, "the Space and Missile Defense Command must anticipate and lead change, not only in its warfighting support mission, but in its management as well."

"Our leadership has embraced the Army Performance Improvement Criteria (APIC) as the method of leading change in our management processes," he said.

"We have been in the implementation mode for about a year and a half now, and have already achieved some significant results. APIC is a valuable resource for leading change. It supports the SMDC Vision by providing a framework for in-depth organizational assessment and measurement of progress. APIC provides the doctrine to guide SMDC leaders on the business battlefield, much as other Army doctrine guides leaders on the physical battlefield. It enables us to examine all aspects of our organization and determine how well we are meeting our goals, with the objective of continuous improvement. This is the hallmark of a highly effective organization," McKown said.

Pages six and seven contain a fold-out outlining SMDC's Strategic Management System. At the heart of the system is the APIC, driven by two of the Army Chief of Staff strategies for Transformation: *Developing Leaders for both Warfighting and Change*, and *Committing to Business Process Improvement/ Efficiencies*. The APIC system is portrayed as a three-tiered framework with (1) Strategy and Action Plans at the top, (2) the APIC system, consisting of leadership and results triads, and (3) Information and Analysis as the foundation. Finally, to the right you will see that incorporating the APIC framework into our everyday business practices helps us achieve our goals, and accordingly the Army to achieve full spectrum dominance, said McKown.

At the top of the framework, Strategy and Action Planning yields the set of customer-focused requirements and action plans that must be met and exceeded for SMDC to succeed. Strategy and Action Plans are closely tied to mission, vision, and values and they guide overall resource decisions. They drive the alignment of measures that ensure customer satisfaction and mission success.

Secondly, the system is comprised of the six APIC categories displayed as a "Leadership Triad" and a "Results Triad." Leadership (Category 1), Strategic Planning (Category 2), and Customer Focus (Category 3) make up the Leadership Triad. This triad emphasizes the importance of a leadership focus on strategy and customers. Every organization that has won the Baldrige Award or the President's Quality Award has a leadership team that is strongly committed to balancing the needs of employees for a pleasant and challenging work environment with the needs of customers for exceptional quality products and services.

"We are fortunate at SMDC to have a commander and a leadership team that is strongly committed to these principles," McKown said. The "input" or "beginning" of the APIC system is customers and their requirements. The APIC suggests that an organization first must define its customers and markets, and then identify what is important to each of these groups. Adapting our focus to changing customer priorities allows us to consistently beat our competitors. Once customers and their requirements have been identified, mission and direction can be developed, i.e., leadership. Once the mission and direction based on customer requirements, have been defined, strategic planning takes place to develop goals and strategies relating to customer requirements.

Human Resources (Category 5), Process Management (Category 6), and Business Results (Category 7) make up the Results Triad. SMDC's employees accomplish our mission through a variety of processes to produce results.

"We know that our competitive advantage depends to a great extent on technology and the collective knowledge, experience and brainpower that exists within SMDC. APIC shows us how to measure and manage this critical Human Resource asset. Process Management shows us how to eliminate non-value added procedures and reduce cycle time and cost, thereby continuously improving our service to our customers. Business results convey whether or not we are succeeding in improving quality and performance within SMDC operations," he said.

The horizontal arrow in the center of the framework links the Leadership Triad to the Results Triad – a linkage critical to the success of the organization. Leaders must review results and learn from them to drive improvement.

At the foundation of the system is Information and Analysis (Category 4). This is where we collect data relative to our performance and analyze the data in order to make informed decisions, he said. Performance measures are derived from our information database. Therefore, we must have reliable information, and analysis of that information, to make informed decisions.

"It is through measures that we align our organizational goals and strategies, and thus channel our different SMDC activities in a consistent direction," said McKown.

The SMDC Strategic Management System is our roadmap for leading change and for effecting continuous improvement in SMDC. Lt. Gen. John Costello, commanding general of SMDC, speaking at the SMDC Quality Awards ceremony last July, said of the SMDC Strategic Management System, "we have embedded in the command a process by which we can do great work for the Army and our nation."

Wanted! People with a story

by Jonathan Pierce
***The Eagle* Editor**

Army newspapers have always existed to support the commander's need to communicate with soldiers, civilian employees, military and civilian family members, and contractors.

The diversity of operations and the geographic dispersal of SMDC magnify the need to inform all of the SMDC audience about the wide range of command activities and to generate increased understanding and unity of effort throughout the command. But a presentation of just the facts leads to an unbalanced publication—one so lacking in interest or entertainment that you, the intended audience, won't read it.

I've heard of people with interesting hobbies like building racing cars, flying hot air balloons, and competitive pistol marksmanship. If you know of co-workers who excel on the job (e.g., employee of the year) or who lead interesting after hours lives we'd like to tell their story.

The Eagle staff is also trying to recognize soldier, civilian and family member promotions, awards and accomplishments.

Submissions must include the person's first and last name, relationship to an SMDC military or civilian employee, the employee's name, position and organization, and a description of the achievement or hobby.

Help us to find and tell the stories you'd be interested in reading.

Send an e-mail with the details to: EagleEditor@smdc.army.mil.

U.S. Army Space and Missile Defense Co

Adhering to the SecDef and CSA Transformation Gui

MISSION

Provide Space and Missile Defense Capabilities for the Warfighter and the Nation by:

- Serving as the Army's specified proponent for Space and National Missile Defense (NMD)
- Integrating operational Theater Missile Defense (TMD) for the Army
- Commanding and controlling Army Space and National Missile Defense forces as the Army component to USSPACECOM
- Articulating Army requirements for joint programs for Space and Missile Defense
- Developing technology, experimenting, testing and fielding assigned Space and Missile Defense systems
- Operating national test and range facilities: U.S. Army Kwajalein Atoll and High Energy Laser Test Facility

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A diverse team of d
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world's best Army
team, achieves
dominance
USASMD
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Transformation Guidance

- Increase Strategic Responsiveness
- Develop Joint Leaders, Improve Operational Jointness, Achieve Joint Vision Goals
- Integrate Active and Reserve Components
- Man Warfighting Units

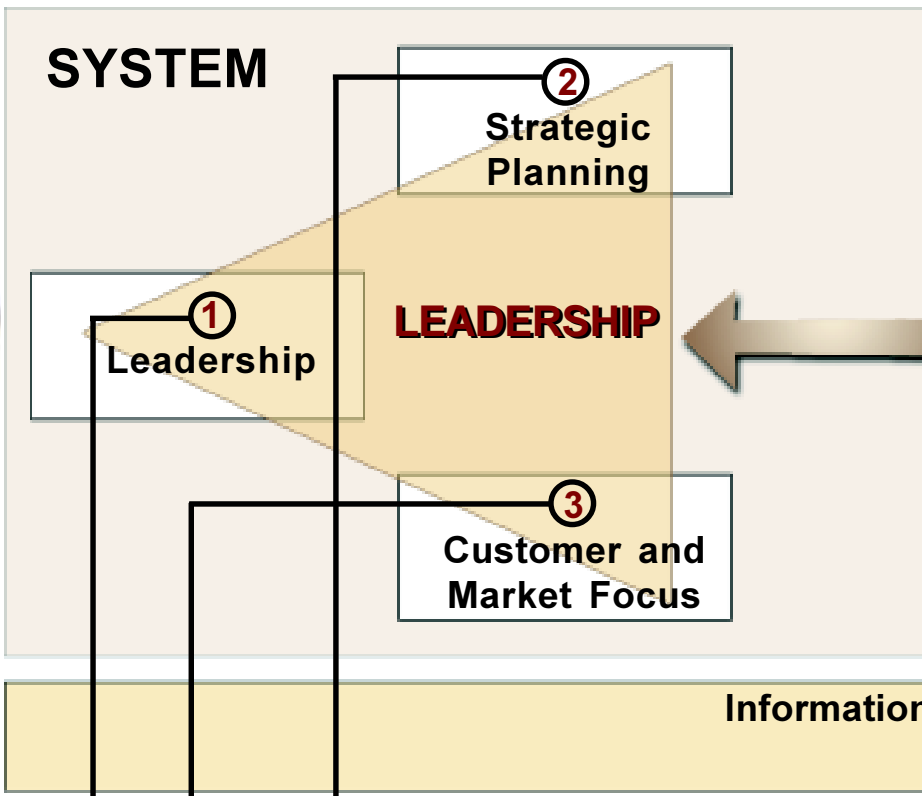
* **Develop Leaders for Both Warfighting and Change**

* **Commit to Business Process Improvement/ Efficiencies**

- Provide for the Well-Being of Soldiers, DA Civilians, Vets, and Army Family Members
- Invest in People--Help Soldiers Achieve Personal Goals
- Provide the Most Modern Equipment to Maintain Technological Superiority

ARMY PERFORMANCE IMPROVEMENT CRITERIA APIC

Customer and
Strategy and



** LEADERSHIP TRIAD

Leadership, Strategic Planning, and Customer Focus are placed together to emphasize the importance of a leadership focus on strategy and customers. Senior leaders must set organizational direction and seek future opportunities for the Command.

LEADERSHIP (1)

Leaders are directly responsible for establishing the values and culture of an organization. Well-run organizations have leaders that realize the importance of being a role model and are careful to always make sure their behavior is consistent with the values and ethics of the organization. The SMDC leadership team is strongly committed to balancing the needs of our stakeholders, our employees, and our customers.

STRATEGIC PLANNING (2)

In strategic planning, mission, vision, values are developed based on your strengths, weaknesses, opportunities, and threats as an organization. The Strategic Plan is developed to include goals, objectives, key success factors, strategies, and measures. The Plan ensures organizational alignment, proper resource allocation, and effective communication.

CUSTOMER FOCUS (3)

Well-run organizations target specific groups of customers, learn everything they can about what is important to those groups of customers, and measure their satisfaction. They build loyalty through strong relationshps with customers. SMDC must seek to understand the voices of customers and their needs. Relationships are an important part of an overall listening and learning strategy. Customer satisfaction results provide vital information for understanding customers and the marketplace.

INFORMATION AND ANALYSIS

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based on management by fact. What thi
gather data on the right variables, analy
decisions and plan improvements. Sele
should be linked to our strategy. The m
financial, customers, employees, and pr
perspectives: past, present, and future.
are satisfying our customers, our emplo
community at large.

"The use of the Army Performance Improvement Criteria (APIC) will sig enhance our existing workforce skil focus our efforts on customer suppo improve our ability to address the Sp Missile Defense needs of the Army a Successful implementation of the A command imperative!"

ommand's Strategic Management System

dance to Ensure Victory on the Battlefield of Change*

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essential space and
pabilities to protect
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future.

VALUES

Loyalty: Bear true faith and allegiance to the U.S. Constitution, the Army, your unit, and other soldiers.

Duty: Fulfill your obligations.

Respect: Treat people as they should be treated.

Selfless Service: Put the welfare of the Nation, the Army, and your subordinates before your own.

Honor: Live up to all the Army values.

Integrity: Do what's right; legally and morally.

Personal Courage: Face fear, danger, or adversity (physical or moral).

Market Focused
Action Plans

5 Human Resource Focus

RESULTS

7 Business Results

6 Process Management

n and Analysis

4

GOAL

Space
Deliver World-Class Space Support to the Warfighter and National Space Interests

Technology
Provide the Nation, the Department of Defense, and the Army Leading Edge Technologies to Meet National and Warfighter Space and Missile Defense Requirements

Missile Defense
Provide the World's Foremost Integrated Missile Defenses to Protect the Nation, the Warfighter and Other National Interests

Work Force
Enhance Workforce Excellence to Ensure Continued U.S. Leadership in Space and Missile Defense

***** RESULTS TRIAD**

Human Resources Focus, Process Management, and Business Results represent the Results Triad since SMDC's workforce and its key processes accomplish the work of the Command that yields results.

4

rmation forms the foundation of a sound
DC Strategic Management System is
is says is that we must systematically
yze those data, and use them to make
ecting the right performance measures
easures should be balanced between
ocesses and focus on three
Measures should focus on how well we
yees, our stakeholders, and the

5 **HUMAN RESOURCES FOCUS**

One of the biggest challenges facing SMDC today is attracting and keeping the best and brightest employees. We do this by enabling employees to develop and utilize their full potential, aligned with the organization's objectives. We must build and maintain a work environment and an employee support climate conducive to performance excellence, full participation, and personal and organizational growth.

6 **PROCESS MANAGEMENT**

Process management is the focal point for all key work processes. The SMDC Strategic Management System requires efficient and effective process management--effective design, a prevention orientation, linkage to suppliers, operational performance, cycle time, and evaluation and continuous improvement.

7 **BUSINESS RESULTS**

This section tells the true tale of the success of our performance efforts, i.e., whether or not processes and programs have really worked to improve quality and overall perforamnce in SMDC. Performance needs to be evaluated in key areas--customer satisfaction, product and service performance, financial performance, human resource results, supplier results and operational performance.

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PIC is a*

FDIC identifies, defines Army needs for Space and Missile Defense

The Force Development and Integration Center supports the Army and the Joint Warfighter by ensuring that space and missile defense operational requirements, are identified and provided to the Space and Missile Defense Command's customers. With its main office located in Arlington, Va., a supporting branch in Colorado Springs and liaison offices at TRADOC headquarters and the Combined Arms Center, the FDIC is a key player in achieving the command's goal for space and integrated missile defense.

During the past year, the FDIC has been decisively engaged in *normalizing* doctrine by successfully including space and missile defense in key Army and joint publications. These efforts to embed space and integrated missile defense in the Army's doctrinal base, especially in new publications reflecting the Army's transformation, will continue in 2001. This year should see the completion of field manual (FM) 3-14.6, "Army Space Support Team Operations," a rewrite of FM 3-14, "Space Support to Army Operations." Both Joint Pub 3-01.3, "Joint Doctrine for Defensive Operations for Countering Air and Missile Threats" and FM 3-01.1, "National Missile Defense Operations" in draft form should also be ready.

The overarching theme for FDIC in 2001 will be to refine the Army's space and integrated missile defense requirements and prioritize them in support of the Army's transformation efforts. Building on the success of its Army Space and Theater Air Missile Defense (TAMD) Master Plan products and addressing space and missile defense goal objectives, the Center will do its part in *operationalizing* space and building advocacy for integrated missile defense by developing modernization strategies for both space and missile defense. The FDIC will integrate the various requirements of the Army's users of space and missile defense capabilities and focus them on support to the transformation process. The end products will reflect consensus within the Army space and missile defense community for a prioritized list of requirements and will provide an azimuth for future space and missile defense technology development, analysis, experiments and war games.

To fully develop and test these requirements, as well as future concepts, FDIC will participate in several space and missile defense games in 2001. These include the Air Force Space Game, the Army's Spring Transformation Game, and the command's Army Space and Missile Defense Game. These games will provide insights into requirements for future operational capabilities and concepts as well as doctrine, training and organization changes. Over the last year, and in conjunction with our participation in the games, the FDIC has revised the Army Space Concept (TP 525-60) and published the Army Theater Missile Defense Concept (TP 525-91) and Army National Missile Defense (NMD) concept (TP 525-82). The concepts provide initial guidance to the SMDC Battle Lab and Technology Center as they determine how emerging space and missile defense technologies can be harnessed to support ground commanders.

FDIC will continue to develop or update operational requirements documents for our proponent areas of Space Control and NMD, and for the Multi-Mission Mobile Processor (M^3P) follow on to JTAGS. Additionally, the center will pursue developing operational requirements supporting materiel solutions for blue force tracking and battlefield characterization, such as Grenadier Brat, GPS, Eagle Vision II, and hyper spectral imagery. Underpinning the requirements process will be the development of the space and missile defense operational architectures (OA). The OA will define the critical linkages among space and missile defense forces, the Army transformation forces, and joint forces.

In addition to its normalizing and operationalizing roles, the FDIC will *institutionalize* space and missile defense. The FDIC has the critical function of serving as the proponent office for the Army's Functional Area 40 Space Operations. In 2001, the FDIC will launch the first space officer quarterly journal, designed to provide fusion and professional camaraderie among the FA40 community; establish an FA40 web forum; and host the first annual space operations officer's conference. The FDIC also has a training developer role in institutionalizing space and missile defense. The center will design and develop the FA40 Space Operations Qualification Course. The first course will be held in June 2001 and is projected to last seven weeks and culminate in a space-centric CPX. Additionally, FDIC trainers will complete the M^3P mission training plan, and continue to work with the NMD Lead System Integrator to develop NMD training products.

The outlook for FY 2001 is FDIC will be as busy as 2000. With the Army's Transformation linked to the potential provided by space and the protection provided by missile defenses, the FDIC will be an integral part of the realization of that future.

SMDC laser facility wins New Mexico quality award

The High Energy Laser Systems Test Facility (HELSTF), located at White Sands Missile Range, N.M., has been selected to receive a Quality New Mexico – Piñon Level Award. HELSTF is a subordinate element of the U.S. Army Space and Missile Defense Command (SMDC).

The Piñon Level award recognizes organizations that have made a commitment to performance excellence. HELSTF is one of two organizations in the southern part of the state to receive this recognition. Quality New Mexico is a non-profit membership organization that motivates, trains, and recognizes New Mexico's organizations for achievement in performance excellence. The organization's award program is patterned after the Malcolm Baldrige National Quality Award as administered by the U.S. Department of Commerce.

Lieutenant Colonel Lynn Tronti, director of HELSTF, along with the other award recipients from New Mexico, were recognized during Quality New Mexico Day at the New Mexico State Legislature Jan. 31, in Santa Fe. An awards ceremony and conference are also scheduled for March 2-3, at the Crowne Plaza Hotel in Albuquerque.

SMDC Hosts Staff Assistance Visit

by Rhonda K. Paige
Arlington, VA

The U.S. Army Space and Missile Defense Command (SMDC) hosted its first Staff Assistance Visit by three members of Headquarters, Department of the Army's Security, Force Protection, and Law Division's Anti-terrorism Assessment Assistance Team, Dec. 12. The team's visit was the fifteenth of planned visits to each of Army's major commands (MACOMS).

The staff assistance visits began in 1997, as a part of Department of the Army's newly formed Anti-terrorism Assistance Team. The team assessed the Army's Anti-terrorism posture, through 17 visits to Army MACOMS, various installations, component headquarters of the Army National Guard, and Army Reserve.

A detailed report was generated from each of those initial 17 visits, with a follow-up visit planned for each Army entity within three years. Because the Teams' Dec. 12 visit was its initial one to SMDC, this will be the first official report on where the command stands in terms of its anti-terrorism efforts.

Specific MACOM assessment areas that the team looked at were Program, Policy and Guidance; Threat and Intelligence; Vulnerability Assessments; Training; and Exercises. Each of the five areas was given a color rating, with Green designating programs that are on track and show no immediate needs for improvement; Amber designating that improvements can be made in certain areas of specific programs; and Red indicating that major improvements are required.

Elaine Lawson, SMDC's Force Protection Officer, said, "of the five areas, SMDC, received two Green, three Amber, and no Red designators. According to Lt. Col. Naeseth, deputy commander of the Anti-terrorism Assistant Team, Green designators are very seldom given, and if that designator is given you can pretty much assume that particular program is squared away.

Much of SMDC's success with its Anti-terrorism and Force Protection programs can be attributed to the command's continuous work to improve the programs.

"Force Protection is not just a once a month, quarter or year event," said Lt. Col. (P) Rick Dorsey, SMDC Deputy Chief of Staff for Operations.

"We must be vigilant and diligent in our efforts to ensure the safety of our personnel every minute of every day of the year; it is our number one priority," he said.

Although a report is compiled based on the team's assessment, team member, Maj. Timothy Small, emphasized that, "this is not an inspection, we are here to assist you. Your results will be compiled with the other MACOMs and that report will give you an idea of how you do in these areas as compared with other MACOMs.

"I think we saw through this process that an anti-terrorism/force protection (AT/FP) must be approached as a team effort if we are to be successful," said Colonel Jim Ward, SMDC Deputy Chief of Staff, Intelligence.

"Every staff element, unit, and individual has a role in assuring a sound ATFP posture," he said.

Firm appreciates SMDC Contracting office

The following, unsolicited article was submitted by Rhonda Harrison of Teledyne Solutions, Inc.

The U.S. Army Space and Missile Defense Command's (SMDC) Contracting and Acquisition Management Office (CAMO) is recognized as a leader in innovative contracting methods and streamlined procedures while providing outstanding support to its customer.

Under the guidance of Mark Lumer, the Principal Assistant Responsible for Contracting, this office was the first Department of Defense contracting command to achieve full operational capability with the Standard Procurement System (SPS). The SMDC CAMO has been received two Excellence in Contracting awards from Department of the Army, and a "Teamworking Excellence" award, all since 1998.

While Lumer has chartered his office to exercise sound business judgment and full compliance with the law on behalf of the Government, he has also succeeded in developing partnerships with industry, constantly working to find solutions to difficult problems, and providing benefits to both the Government and the industry partner.

In the summer of 2000, the Theater High Altitude Area Defense (THAAD) Engineering and Manufacturing Development (EMD) contract was awarded to Lockheed Martin Space Systems Company. A joint government and industry team used the alpha contracting process to develop the scope of work, prepare and evaluate the master plan and schedule, prepare and evaluate the proposal, and to develop a model contract. This process greatly reduced the preparation, evaluation, and negotiation timeline, resulting in a best-value contract for the government.

A more recent example of the innovative abilities of CAMO involves Teledyne Brown Engineering (TBE), one of the contractors on SMDC's Systems Engineering and Technical Assistance Contract (SETAC).

Teledyne Brown Engineering wanted to perform as a subcontractor to Boeing, one of the prime contractors serving the Ballistic Missile Defense Organization (BMDO), while also providing technical assistance to SMDC in the same general area. SMDC was concerned about potential conflict of interest issues, and naturally wanted to protect the government's interests in the creative process on both sides, as well as in the review, evaluation and analysis of the prime contractor's products for BMDO.

Lynne Washburn, the government contracting officer, with three members of the SMDC legal office, Col. Edward France, Robert Hamilton, and Steve Wynn**,** worked with industry counterparts for months to preserve the government's interests, yet not restrict the company in pursuing other business. Both parties determined that the only way the two efforts could be performed would be through two physically, legally, managerially, and financially separate institutions.

After a thorough discussion with Washburn, TBE President Dick Holloway (and senior management) decided to create an independent corporation.

The company proposed a separation of the people performing the SETA contract, including a slice of support from overhead operations, and a separate management structure under the guidance of a board of directors, to be incorporated as a wholly owned subsidiary of TBE.

After negotiations for implementing details, the government accepted the Teledyne Brown's proposal. During the course of the transition, TBE was able to sustain its level of excellent support to the customer, making the process worthwhile to both the contracting office and to the company.

The result is Teledyne Solutions Inc. (TSI), located in Hunstville. The company has an independent board of directors and its own bylaws. Managers of TBE are precluded from participating in daily operations of Teledyne Solutions, and employees exclusive to TSI perform the contract. Through an automated financial accounting system, implemented within a month of incorporation, TSI has separately accountable revenues and profits. TSI has its facility clearance for performing classified tasks, and all personnel and their security clearances have been transferred to the new company.

This article tends to over-simplify the process. The reality is a well-orchestrated synchronization of hundreds of activities, most of which had to occur in a precise order to ensure that the security, legal and financial aspects of the spinoff were not threatened. Part of the process included weekly meetings between SMDC and TBE personnel to coordinate details.

The cooperation among representatives from the government's contracting offices, command security and legal offices, Defense Security Service, Defense Contracting Management Command, and TBE and TSI is what made this possible.

The Army's Space and Missile Defense Command's Contract and Acquisition Management Office once again has shown through innovation and cooperation with its industry counterparts, solutions can be found for the most difficult problems.

Developing tools for situational awareness

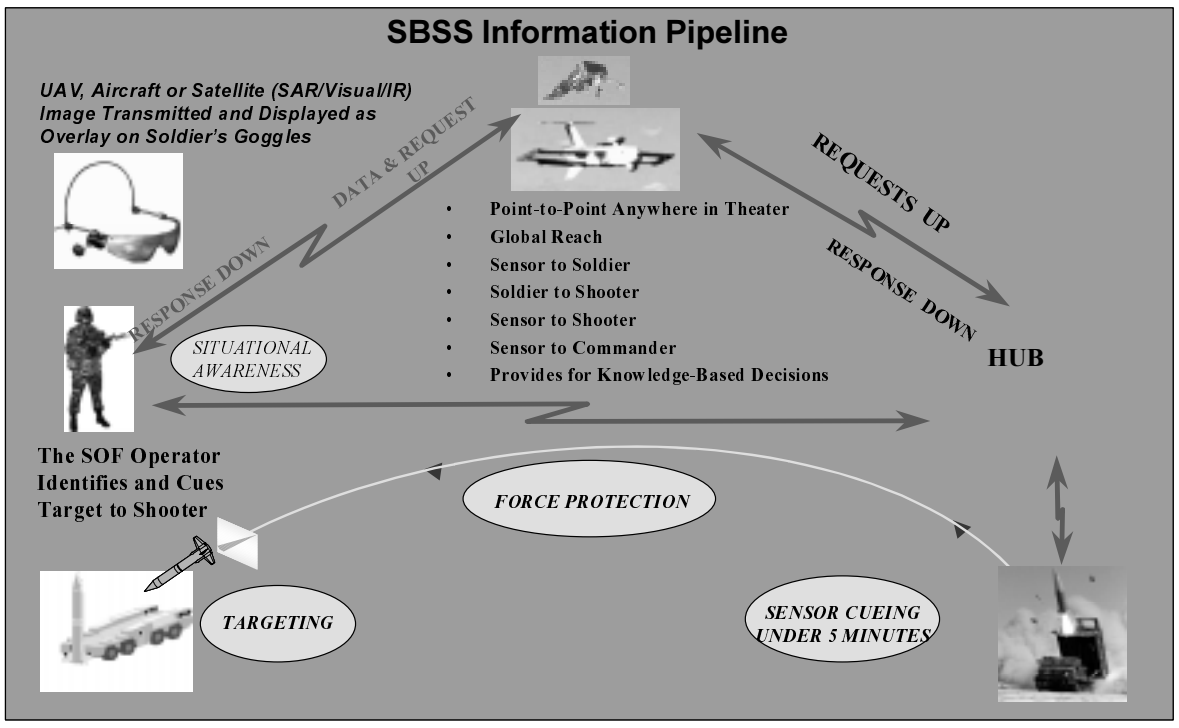
As technological advances make the battlespace more lethal the operational tempo of future warfare will greatly increase. Tactical commanders will need real-time/near-real-time information to have situational awareness and enhance their ability to take quick, decisive action in combat.

The continued development of information technologies will substantially change the future conduct of military operations by enhancing combat effectiveness, reducing casualties, and protecting the force. The capability to collect, process, and disseminate an uninterrupted flow of information to the commander will be paramount to future military success. A key element to this information process is the wide range of sensors deployed in space, in the air and on the ground, gathering information to provide our military with the information advantage.

Sensors serve one of three basic functions, (1) threat warning or detection of hostile weapons systems, (2) surveillance and detection or the tracking of all targets within a general area, and (3) fire control or acquiring, tracking and engaging targets.

The data generated by knowledge-based computer systems can be combined and correlated in seconds to provide commanders with a near-real-time, common, accurate picture of the battlefield. This process known as "multisensor fusion" will revolutionize future warfare.

The SMDC Sensors Directorate is developing advanced components, processing, and multisensor fusion capabilities for the warfighter. Descriptions of three of the more promising sensor programs follow.



Space Based Soldier System

In the future, the force that holds the advantage in situational awareness will likely control the tactical and operational tempo of the battle and maintain the initiative. SMDC is dedicated to achieving a "sensor to foxhole" capability so the warfighter will maintain information superiority. The Space Based Soldier System (SBSS) promises to make this concept a reality. SBSS envisions individual Special Forces soldiers, on or beyond the FEBA, being equipped with a weapon-mounted IR sensor (camera) that displays the image to a set of goggles worn by the soldier. The image provides situational awareness, through thermal sensitive imagery, of the location and activity of enemy soldiers and equipment. The soldier is also able to receive data from space-based sensors, through a situational display on these same goggles, about the situation "over the next rise" or in adjacent areas that are unable to be reconnoitered on the ground. A ground-based "fusion hub" is able to provide "reachback" capability for weather, terrain products, imagery or pertinent intelligence products directly to the forward deployed Special Forces soldier. Additionally, the soldier is able to report simultaneously, via satellite communications, to multiple echelons in the rear, his interpretation of the current situation.

Project Hercules

Project Hercules is a national effort to develop robust adaptive algorithms to counter unusual and evolving threats. An algorithm is a definite procedure for solving a problem using a finite number of steps. Critical tracking, discrimination, aim point selection, and kill assessment algorithms that act according to observed target phenomenology provide the "brains" that allow sensors associated with Theater Missile Defense (TMD) and National Missile Defense (NMD) weapons systems to achieve the high confidence needed to engage and defeat emerging threats and remain dominant in tomorrow's battlespace. Development of smart algorithms for the battlespace is extremely cost efficient, returning hundreds of millions, if not billions, of dollars for an investment of tens of millions of dollars.

High Altitude Observatory Upgrade

The HALO Upgrade is the follow-on or improved version of the High Altitude Observatory/Infrared Instrumentation System (HALO/IRIS). HALO/IRIS supports the warfighter through the collection of infrared, visible, and ultraviolet broadband and spectral data that is directly applicable to weapon systems development programs.

It provides high quality, radiometric, three color, simultaneous IR data and visible photo-documentation at high frame rates. The HALO aircraft, a Gulfstream IIB, operates above 45,000 feet with host multisensor data collection platforms. It has been substantially modified to carry three optical sensor suites. Two of these platforms, designated Alpha and Beta, are multiconfigurable to carry a wide assortment of sensors spanning the ultraviolet (UV), visible, and IR spectrums. The third sensor platform contains the IRIS sensor suite that is the primary infrared sensor aboard the HALO. It is a three-color, staring, high frame rate, imaging system that collects data simultaneously across the short-, mid- and long-wave infrared bands. Although the HALO/IRIS has a legacy of being a reliable data collection asset, the asset, while relatively economical, has limited data collection capabilities.

The HALO Upgrade alleviates these problems by installing a pod on top of the fuselage. Moving the sensor package outside the fuselage offers many other advantages, such as using cold ambient temperature, relieving space constraints inside the cabin, and the ability to track from either side of an aircraft with extreme sensitivity and stability.

The prime objective of the HALO Upgrade is to obtain visible and IR imagery and multispectral data on missile systems during testing. The collected data will be used in the design and validation of Ballistic Missile Defense systems performance, discrimination technology programs and threat predictive models.

The approach chosen to deal with the system swapout is a concerted effort in systems integration, including a surrogate Gulfstream aircraft. While the HALO/IRIS remains operational, the surrogate will be used during the ground-test phase to perform as many systems tests and performance measurements as possible in a ground-test mode. This will ensure that the ground-test phase of the actual HALO aircraft is minimized, and that most of the air frame integration issues (e.g. cable lengths and ergonomics) will be addressed without impacting HALO/IRIS mission support.

HALO/IRIS configuration of the Gulfstream IIB is shown above, an artist's drawing of the HALO Upgrade (right) displays the aircraft's external sensor pod.

McArthur retires from Army, stays at NASA

by Ed White
Colorado Springs, Colo.

Where does a person go when they have reached the pinnacle of their career? And, where does one go when reaching the pinnacle includes reaching the rank of colonel in the U. S. Army and the distinction of being a NASA astronaut?

"The bottom line," according to Col. William S. McArthur Jr., "is that I will continue in the astronaut program as a civilian. NASA is sending me to Russia for a six-month assignment. I'll be in charge of supervising the training and support that all NASA astronauts get while they are in Russia learning to operate Russian equipment."

McArthur's military career has taken him from leading a tank platoon, to flying rotor-wing aircraft, to soaring into space to help assemble the International Space Station. He has logged 13 hours and 16 minutes walking in space and flown off the planet three times. McArthur has approached all this with an amazing calm and matter-of-fact attitude.

He wanted to go into space because, "in my mind, it seemed one of the areas in which I could achieve the pinnacle of success. I wanted to combine the things in which I am most interested, both with my Army specialty and the things I find intellectually stimulating."

McArthur said that trying to get into the astronaut program is a lot like playing the lottery. "If you think you are interested, go buy a ticket. The chances of winning may not be good, but they improve a whole lot if you are playing in the game."

He spoke of how his family has handled his occasional trips off planet. He said, "First, we really don't fly in space that often. I was actually selected for the astronaut program 10 years ago and I just recently completed my third flight."

He praised his wife for her understanding and NASA for their ability to keep the families a part of the adventure. "My wife sort of recognizes, very wisely, that the same things that have motivated me to go in this direction professionally are probably the things that she loves in me."

He added, "plus NASA treats families very, very well. They work hard to make sure we are able to have some contact with each other via e-mail (while in space). NASA works very hard to ensure the families don't feel isolated and excluded from the whole adventure."

He recalled his favorite moment as an astronaut. "I think one of the most thrilling moments I had was on my second space walk. I egressed the vehicle first. I was there floating in the payload bay configuring tools that my partner was handing out of the hatch. Just that realization that I was the only living thing outside the spaceship was so very special. I looked around and realized that it was an environment absolutely hostile to life. It was not a place where life as we know it could exist. It was quite a surreal experience."

McArthur does not think of himself as old, but admitted that retiring from the Army, by definition may make it difficult to dodge that adjective any more. He said, "There is an expression that old soldiers never die, they just fade away. Well, I don't intend to do the former, and I would never do the latter."

Photo courtesy of NASA.

Army Col. William S. McArthur Jr. takes a space walk.

Turning fear into strength

Once uncomfortable with making presentations to groups a Strategic Plans and Analysis employee has become Toastmaster of the Year for Redstone Arsenal, Ala.

"I got into Toastmasters because I hated talking to an audience," said Robbie Holcombe. "The aim of Toastmasters is to teach leadership and organization skills."

Toastmasters, she said, helps people learn how to do one-on-one interviews, talk to groups, become comfortable with doing presentations, and learn how to deliver speeches for various occasions. Members advance at their own pace.

Holcombe won the Toastmaster of the Year honors by recruiting four new members, participation in club meetings, earning the Competent Leader and Bronze Level achievements, and serving as a club officer for two terms. She also served as a district officer.

Participants can progress through various Toastmaster levels. As a level one Competent Toastmaster club members learn progressive skills from doing ice breakers to delivering a speech to inspire an audience, challenging them to do something.

In level two, Competent Leader, the Toastmasters deliver speeches to help improve the club and they serve as a club officer for 6 months to a year. In advanced levels three through five (the bronze, silver, and gold levels) members give more speeches in areas such as technical presentations, story telling, and public speaking.

Holcombe and some friends are starting a new club for the Space and Missile Defense Command facility in Huntsville. The club, open to SMDC employees and contractors, will meet in the Huntsville facility each Tuesday at 11 a.m. Toastmasters is an approved government training opportunity for individuals to improve their communication skills.

For more information, contact Holcombe at 955-5466 or e-mail at HolcombR@smdc.army.mil; or contact Eliza Callahan at 955-3985 or e-mail at CallahanE@smdc.army.mil.

JTAGS evolves into acquisition reform success story

JTAGS evolved from a series of increasingly complex and highly successful technology demonstrations to a full, tactically supported battlefield-ready system in a short timeframe. Although not officially a Fast Track Procurement, the acquisition strategy devised put the tactical system in the hands of troops 4.5 years after inception. The JTAGS Product Office accomplished this rapid development and fielding by the successful implementation of a wide variety of acquisition reform initiatives and practices. Nearly $85.9 million in program costs were avoided through acquisition reform measures. These measures included:

1) Implementation of a streamlined spiral acquisition strategy built on successively complex technology development and demonstration phases each involving testing, user evaluation, and overseas contingency support.

2) Extensive use of Non-Developmental Item (NDI)/Commercial Off-The-Shelf (COTS) hardware and legacy software.

3) Elimination of military specifications and exclusive use of performance standards and specifications.

4) Innovative contracting strategies included: an Engineering Manufacturing Development contract that used past performance and demonstrated capability as significant factors in source selection, a fixed price Production Option with incentives, Engineering Support Options, Contractor Logistics Support Options, and an option for two Navy units.

5) Joint service cooperation with the U.S. Navy.

JTAGS pioneered many of the principles now documented in the new DoD 5000 Directives and Army Regulation 70-1, transitioning from concept exploration to increasingly complex technology demonstrations and to a formal stand-alone acquisition program at Milestone II. JTAGS transitioned from an Army technology demonstration program to a formal Acquisition Category III program under PEO Air and Missile Defense.

Army doctor discovers cancer vaccine

Lt. Col. (Dr.) George Peoples, a surgical oncologist at Walter Reed Army Medical Center, is recognized for discovering and developing a cancer vaccine effective against most cancers. He also established the Walter Reed cancer vaccine program. Peoples became interested in developing a cancer vaccine during his surgical residency at Harvard Medical School's Brigham and Women's Hospital in Boston.

"I started looking around at different aspects of cancer treatment—surgery, radiation, chemotherapy, and in the grand scheme of things, there had not been anything really new and exciting in that area for awhile. I looked in the area where there might be potential for something really big and it just struck me—the immunology therapy of cancer; how the body's immune system might be used to fight the cancer."

He said there is proof that the body's immune system already puts up a fight against cancer. "We are probably constantly exposed to the malignant degeneration of cells in our body and they are recognized and cleared by the immune system before they can actually get established."

Peoples learned from a study on melanoma cancers that immune cells in the body could react and kill those types of cancer cells.

"It's very similar to how the immune system will recognize and kill a virally infected cell.

"If you can show specifically what the immune system can recognize on a cancer, it can be a basis for a vaccine. You can take the protein expressed in ovarian cancer and stimulate the lymphocytes that eventually react against the cancer," said Peoples.

Two clinical trials for the vaccine are underway in breast and prostate cancer. "We've taken women who have breast cancer and men who have prostate cancer through their staging chemotherapy, radiation for example. We make them NED (no evidence of disease)," said Peoples.

"However, they are predicted to be at a high risk of reoccurrence. Once they're free of their disease, you start their vaccinations, you boost their immune system against this peptide from their tumor, and then we wait and see if they develop a reoccurrence. This is a situation in which we can test these peptides in a truly preventive mode. The goal is to show with an easily constructed vaccine, you can actually treat multiple tumor types."

"The most important question about the vaccine is patient protection from cancer reoccurrence," Peoples said. "The only way you can answer that question is to do these preventive trials with the small group of people who you can follow closely during an 18-month to two-year window and to see if you can reduce their 50 percent reoccurrence rate to something substantially less, hopefully zero.

"There's still a lot of work to be done," Peoples said. "I look at these trials as proof of principle. You can vaccinate folks, you can get an immunized response, and it does protect in this small group. But now how can you broaden it? If the proof of the principle works, then the rest is just a little elbow grease, time, and working out the details," he said.

Depression affects millions each year

Spc. Sharron L. Grinder

FORT GORDON, Ga. (Army News Service, Jan. 3, 2001) — Look at the person on your left and on your right; then think about your fellow soldiers or coworkers and even family members. Chances are that at one time or another either you or they have suffered from a bout of depression.

"Depression can ultimately kill you," said Lt. Col. John Trakowski, chief of adult outpatient psychological services at Eisenhower Army Medical Center, Fort Gordon, Ga.

Depression is an illness that attacks between 17 to 20 million Americans each year and affects twice as many women as men, according to the National Institute of Mental Health. Trakowski said the good news is that depression is a treatable disease and nothing to be ashamed of. By aggressively addressing the symptoms, he said sufferers of depression can live healthy, productive lives.

Trakowski said active-duty service members have nothing to fear in the line of career reprisals if they are honest with their chain of command if asked about using psychological services.

There are two types of depression: clinical depression and what is normally called sadness or "the blues." The major difference between the two is that clinical depression is an illness, while sadness is basically a normal reaction to unsettling events that have occurred in a person's life, such as marital problems or a bad work evaluation.

Trakowski said depression can be caused by biological or chemical reasons, or it can be a reaction to an extended period of intense loss such as being fired, divorce or the death of a loved one or other instances of intense emotional anguish. When someone is clinically depressed they are down emotionally for an extended period of time.

"When someone has the blues their reaction might be, 'I didn't like what happened,' and for that person life goes on," he noted. For the clinically depressed, he said life becomes a chore and often lacks joy and purpose.

According to the U.S. Department of Health and Human Services Public Health Service Alcohol, Drug Abuse, and Mental Health Administration, symptoms of depression are manifested by feelings of sadness, emptiness, hopelessness, pessimism, guilt, helplessness and worthlessness. People who are depressed have a hard time making decisions and complain of a lack of energy, have trouble falling asleep, staying asleep or getting up.

Other symptoms include changes in appetite, headaches, stomach aches or backaches. The report said some victims of depression are restless and irritable and may want to be alone most of the time. They may also start abusing drugs and alcohol and cut back on hobbies or activities that are usually pleasurable. One of the biggest indicators of depression are thoughts of suicide. He also noted that depression affects bodily functions, and added that nutrition and lack of sleep can affect a person's emotional health.

"You have to take care of yourself. It might sound impossible, but your body needs eight hours of sleep a day, six hours minimum," he said.

When left untreated, depression can ultimately wreck havoc on a person's total well-being. Trakowski said the best way to fight depression is by being aware of the problem and by self-education.

"Depression is an illness that can be treated effectively," Trakowski said. "No one should ever be ashamed to seek help."

When a person feels a depressed mood coming on, Trakowski said they should force themselves to do pleasurable activities, ensure they get enough rest, exercise and eat a proper diet. He added that walking three or four times a week also does wonders. "Exercise releases dopamine, which is a natural mood enhancer," he said.

A poor diet can contribute to pernicious amnesia, dementia, mood changes, mood disorders. A diet lacking in niacin can cause delirium, apathy and even hyperirritability. And a diet lacking in Vitamin C, can also result in depression and anxiety. Eating a good source of protein such as fish, lean meats, chicken, peanut butter, tofu or beans at least twice a day increases alertness and mental energy.

Carbohydrates such as bread, pasta, rice, crackers cereal or potatoes should be eaten at most meals to maximize serotonin production and prevent depression, but should be limited to 55 percent of a person's diet.

(Editor's note: Spc. Sharron Grinder is a staff member of the Signal newspaper at Fort Gordon, Ga.)